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Chairman Jackalyne Pfannenstiel
Associate Member, IEPR Committee
California Energy Commission

Commissioner Jeffrey Byron
Presiding Member, IEPR Committee
California Energy Commission

RE: 08-IEP-1G and indicate Self Generation Incentive Program Cost Benefit Analysis

Dear Commissioners:

Capstone Turbine Corporation was able to listen to the recent IEPR Committee Workshop: Evaluation of the CPUC's Self-Generation Incentive Program required by Assembly Bill 2778. We applaud the diligent efforts of the CEC and its consultants to produce the required report in a timely manner, and we would like to raise the following issues pertaining to microturbines.

Other generation sources in addition to combined cycle gas turbine (CCGT) power plants should be used in order to provide a more illustrative analysis that accounts for the realities of California's fuel mix and the state's climate and environmental goals.

California's power plants are a diverse mix, of which CCGT is only a small portion. Because of this reality, we think it useful to conduct analyses of emissions performance against other types of power production. A CCGT plant is arguably the best-in-class combustion technology for centralized plants, so that comparison is certainly useful. However, a typical gas peaking plant, which also produces marginal power, is more common than a combined cycle plant. Although no new coal-fired plants are expected, coal still produces over 15 percent of California's electricity today.

We do not think that it is an "either/or" decision between clean distributed generation and best-in-class centralized combustion plants. In order to reach its ambitious goals, the CEC and other state agencies should work to close the dirtiest plants first. It is possible that AB 32's efforts to put a price on carbon emissions will serve this purpose by making coal-fired plants too expensive to

run. Under these circumstances, state-of-the-art CCGT plants would likely be more widespread in California.

It is worthwhile to mention that one of the many benefits of distributed generation is that it can be deployed incrementally at relatively low cost, whereas centralized plants take significant time and resources to plan, finance, and build. In addition, a well-constructed SGIP program leverages contributions from the IOUs against additional private monies. The end result is rapid deployment of clean distributed generation that benefits the quality of life for Californians.

The data set selected for the analysis does not represent current technologies in the marketplace today, and does not account for advancements for certain relevant technologies.

We certainly acknowledge the difficulties involved in fulfilling the statute while grappling with disparate sources of data. However, we question whether the analysis provides an accurate assessment of the program today, as well as in the future. For example, Capstone Turbine Corporation has developed a CARB-certified C65 microturbine with a much cleaner emissions profile. We are currently underway with getting the C200 CARB certified. Unfortunately many of the CHP installations that were deployed years ago were not effectively sized to their thermal loads, resulting in lower efficiencies than are the norm today. Many of these installations are included in the Itron report, upon which the consultants have relied for data. By relying on data from projects installed in 2001-2006 timeframe, the technologies that would be deployed in California today are not recognized by the report.

The technologies selected for future consideration in the SGIP – Stirling engines, energy storage, and renewable fuels – are too limited. During this past legislative session, SB 1012 nearly reinstated combustion technologies into the program. Our company is currently working on powering microturbines with hydrogen, solar thermal, and syngas. As the CARB standard becomes stricter, even our natural gas-fired engines will have to be cleaner. We urge the CEC and TIAX to take notice of such advancements in clean technologies.

Calculations based on current microturbine technologies compared against other baseline emissions produces a more accurate CBA of the SGIP.

According to our calculations based on the available EPA data for power plant emissions of NOx and CO2, our CARB C65 microturbine delivers significant emission reductions over 1) the average U.S. power plant; 2) the average fossil fuel-based power plant in California; and 3) the average natural gas-fired combined cycle power plant. So while Capstone's CARB-certified technology is cleaner than even CCGT, it delivers even more emissions reductions when compared to the average U.S. power plant or the average fossil fuel-based power plant in California.

Furthermore, the current report did not discuss the effect of SGIP technologies such as microturbines on local emissions. A primary benefit of CHP is that a hot water heater is no longer necessary at the site. These heaters can be very polluting, emitting NOx and VOCs. Capstone CHP systems significantly lower these emissions, making the local air much cleaner and safer to breathe.

In closing, Capstone Turbine Corporation is fully supportive of the goal of the CBA, and is ready to assist in any way possible with the process. We have just recently submitted our latest emissions data to TIAX upon their request and will continue to work with them to share data on our products.

Sincerely,

Stephen Gillette
Vice President, Product Management